No. 9100173

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

The Ohio State University,
Ohio Agricultural Research and Development Center

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF eighteen YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS SPECIFIED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'Edison'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the* Plant Variety Protection Office *to be affixed at the City of* Washington, D.C. *this* 30th *day of* September *in the year of our Lord one thousand nine hundred and* ninety-four.

Attest:

Kenneth Evans
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Mike Espy
Secretary of Agriculture

FORM APPROVED: OMB 0581-0055, Expires 1/31/91

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) *(as it is to appear on the Certificate)*
   Ohio Agricultural Research and Development Center, The Ohio State University
2. TEMPORARY DESIGNATION OR EXPERIMENTAL NO.
   HM8597
3. VARIETY NAME
   Edison
4. ADDRESS *(street and no. or R.F.D. no., city, state, and ZIP)*
   1680 Madison Ave.
   Wooster, OH 44691
5. PHONE *(include area code)*
   (216) 263-3701

FOR OFFICIAL USE ONLY

PVPO NUMBER: 9100173

FILING — Date: May 6, 1991 — Time: ☐ A.M. ☐ P.M.

FEES RECEIVED — Filing and Examination Fee: $2150.— Date: May 6, 1991

Certificate Fee: $250.00 Date: Sept. 2, 1994

6. GENUS AND SPECIES NAME
   Glycine Max
7. FAMILY NAME *(Botanical)*
   Fabaceae (Leguminosae)
8. CROP KIND NAME *(Common Name)*
   Soybean
9. DATE OF DETERMINATION
   December 15, 1986
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION *(Corporation, partnership, association, etc.)*
    State Agricultural Experiment Station
11. IF INCORPORATED, GIVE STATE OF INCORPORATION
12. DATE OF INCORPORATION
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS
    Dr. B. A. McBlain
    Department of Agronomy, OSU-OARDC
    1680 Madison Ave.
    Wooster, OH 44691
    PHONE *(Include area code)*: (216) 263-3879
14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED *(Follow INSTRUCTIONS on reverse)*
    a. [X] Exhibit A, Origin and Breeding History of the Variety.
    b. [X] Exhibit B, Novelty Statement.
    c. [X] Exhibit C, Objective Description of Variety.
    d. [ ] Exhibit D, Additional Description of Variety.
    e. [ ] Exhibit E, Statement of the Basis of Applicant's Ownership.
    f. [X] Seed Sample (2,500 viable untreated seeds). Date Seed Sample mailed to Plant Variety Protection Office ____________.
    g. [X] Filing and Examination Fee ($2,150) made payable to "Treasurer of the United States."
15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? *(See section 83(a) of the Plant Variety Protection Act.)*
    [X] YES *(If "YES," answer items 16 and 17 below)* [ ] NO *(If "NO," skip to item 18 below)*
16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
    [X] YES [ ] NO
17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?
    [X] FOUNDATION [X] REGISTERED [X] CERTIFIED
18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.?
    [ ] YES *(If "YES," through* [ ] Plant Variety Protection Act [ ] Patent Act Give date ____________)
    [X] NO
19. HAS THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES?
    [ ] YES *(If "YES," give names of countries and dates)*
    [X] NO
20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

    The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in section 41, and is entitled to protection under the provisions of section 42 of the Plant Variety Protection Act.

    Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT *(Owner(s))*	CAPACITY OR TITLE	DATE
[signature]	Plant Breeder	8/24/90
[signature]	Patent & Copyright Administ.	5/2/91

FORM CSSD-470 (5-89) Edition of FORM LS-470, 3-86, is obsolete

'Edison' Exhibit A - Origin and Breeding History

'Edison', previously tested as advanced line HM8597 and breeding line OX8016-16, was developed at OSU-OARDC from the cross HW79116 x HW79022. [HW79116 is an Ohio breeding line from the cross 'Cumberland' x 'Pella'. HW79022 is an Ohio breeding line derived from 'Woodworth' x L60-347-1-15-1G. The breeding line L60-347-1-15-1G was selected in Ohio from the cross 'Harosoy' x 'Higan' which was made in Illinois. Higan has uncharacterized gene(s) for resistance to *Phytophthora megasperma* f. sp. *glycinea* (*Pmg*). All germplasm used was in the public domain or was provided freely as germplasm.] The cross was made in the field in the summer of 1980 at the Ohio Agricultural Research and Development Center, The Ohio State University, Wooster, Ohio. The F_1, F_3 and F_4 generations were grown in Puerto Rico in the winters of 1980-81 and 1981-82. The F_2 and F_5 generations were grown in Wooster. Generations were advanced by single pod descent until the F_5 which was a bulk. Edison was first selected as an F_5 plant from that bulk (OX8016-16), was redesignated as HM8597 when it entered the Ohio Advanced Line Test (as entry 97 in 1985), and was reselected as a composite of the progeny of 25 F_9 plants which appeared to be identical in two successive generations. The seed was increased in 1989 and made available to foundation seed organizations in states participating in the regional tests. It was named after Thomas Alva Edison, inventor.

Edison was evaluated for five years in multiple location bordered tests in Ohio prior to release. It was also tested in the Uniform Soybean Tests, Northen States (USTNS) from 1987 to 1989 inclusive. Data from the Ohio and USTNS tests indicated that Edison was intermediate to Resnik and Flyer in maturity but was higher yielding especially in tests with row widths of 50 cm or less.

Edison has purple flowers, tawny pubescence, tan pods, and shiny yellow seed with black hila. It is a late Group III cultivar, and is generally adapted from 39 to 41° N. Lat. It is known to be resistant to races 1, 3, 4, 7 and 10 and susceptible to at least race 16 of *Pmg*. The original source of the resistance is Higan. It is also moderately resistant to pod and stem blight (caused by *Diaporthe phaseolorum*).

2

9100 T3

'Edison' Exhibit B - Statement of Novelty

'Edison' is most similar to `Resnik'. Edison has phytophthora resistance derived from Higan instead of `Kingwa'. Compared to Resnik, Edison gives an intermediate hypocotyl test reaction and a resistant root test reaction, instead of resistant for both with race 4 of *Phytophthora megasperma* f. sp. *sojae* (*Pms*). This reaction is unknown in any other soybean cultivar. Edison has very acutely angled branches giving it a very slender plant type compared to Resnik, which is bushy. This short slender plant type also appears to be unique among Group III soybean cultivars. Edison is also 2 to 3 days later than Resnik but is no taller.

FORM APPROVED: OMB NO. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, MEAT, GRAIN & SEED DIVISION
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MARYLAND 20705

EXHIBIT C
(Soybean)

OBJECTIVE DESCRIPTION OF VARIETY
SOYBEAN (Glycine max L.)

NAME OF APPLICANT(S)	TEMPORARY DESIGNATION	VARIETY NAME
Ohio Agricultural Research and Development Center, The Ohio State University	HM8597	Edison

ADDRESS *(Street and No., or R.F.D. No., City, State, and Zip Code)*
1680 Madison Avenue
Wooster, OH 44691

FOR OFFICIAL USE ONLY
PVPO NUMBER
9100173

Choose the appropriate response which characterizes the variety in the features described below. When the number of significant digits in your answer is fewer than the number of boxes provided, place a zero in the first box when number is 9 or less (e.g., [0][9]). Starred characters ★ are considered fundamental to an adequate soybean variety description. Other characters should be described when information is available.

1. SEED SHAPE:

[1]

1 = Spherical (L/W, L/T, and T/W ratios = < 1.2)
2 = Spherical Flattened (L/W ratio > 1.2; L/T ratio = < 1.2)
3 = Elongate (L/T ratio > 1.2; T/W = < 1.2)
4 = Elongate Flattened (L/T ratio > 1.2; T/W > 1.2)

★ **2. SEED COAT COLOR: (Mature Seed)**

[1] 1 = Yellow 2 = Green 3 = Brown 4 = Black 5 = Other *(Specify)* _____

3. SEED COAT LUSTER: (Mature Hand Shelled Seed)

[2] 1 = Dull ('Corsoy 79'; 'Braxton') 2 = Shiny ('Nebsoy'; 'Gasoy 17')

★ **4. SEED SIZE: (Mature Seed)**

[1][4] Grams per 100 seeds

★ **5. HILUM COLOR: (Mature Seed)**

[6] 1 = Buff 2 = Yellow 3 = Brown 4 = Gray 5 = Imperfect Black 6 = Black 7 = Other *(Specify)* _____

★ **6. COTYLEDON COLOR: (Mature Seed)**

[1] 1 = Yellow 2 = Green

★ **7. SEED PROTEIN PEROXIDASE ACTIVITY:**

[2] 1 = Low 2 = High

★ **8. SEED PROTEIN ELECTROPHORETIC BAND:**

[0] 1 = Type A ($SP1^a$) 2 = Type B ($SP1^b$)

★ **9. HYPOCOTYL COLOR:**

[4] 1 = Green only ('Evans'; 'Davis') 2 = Green with bronze band below cotyledons ('Woodworth'; 'Tracy')
3 = Light Purple below cotyledons ('Beeson'; 'Pickett 71')
4 = Dark Purple extending to unifoliate leaves ('Hodgson'; 'Coker Hampton 266A')

★ **10. LEAFLET SHAPE:**

[3] 1 = Lanceolate 2 = Oval 3 = Ovate 4 = Other *(Specify)* _____

11. LEAFLET SIZE:

[3] 1 = Small ('Amsoy 71'; 'A5312') 2 = Medium ('Corsoy 79'; 'Gasoy 17') 3 = Large ('Crawford'; 'Tracy')

12. LEAF COLOR:

[3] 1 = Light Green ('Weber'; 'York') 2 = Medium Green ('Corsoy 79'; 'Braxton') 3 = Dark Green ('Gnome'; 'Tracy')

★ **13. FLOWER COLOR:**

[2] 1 = White 2 = Purple 3 = White with purple throat

★ **14. POD COLOR:**

[1] 1 = Tan 2 = Brown 3 = Black

★ **15. PLANT PUBESCENCE COLOR:**

[2] 1 = Gray 2 = Brown (Tawny)

16. PLANT TYPES:

[1] 1 = Slender ('Essex'; 'Amsoy 71') 2 = Intermediate ('Amcor'; 'Braxton') 3 = Bushy ('Gnome'; 'Govan')

★ **17. PLANT HABIT:**

[3] 1 = Determinate ('Gnome'; 'Braxton') 2 = Semi-Determinate ('Will') 3 = Indeterminate ('Nebsoy'; 'Improved Pelican')

★ **18. MATURITY GROUP:**

[0][6] 1 = 000 2 = 00 3 = 0 4 = I 5 = II 6 = III 7 = IV 8 = V 9 = VI 10 = VII 11 = VIII 12 = IX 13 = X

★ **19. DISEASE REACTION:** (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

BACTERIAL DISEASES:

★ [2] Bacterial Pustule (*Xanthomonas phaseoli* var. *sojensis*)

★ [0] Bacterial Blight (*Pseudomonas glycinea*)

★ [0] Wildfire (*Pseudomonas tabaci*)

FUNGAL DISEASES:

★ [0] Brown Spot (*Septoria glycines*)

Frogeye Leaf Spot (*Cercospora sojina*)

★ [0] Race 1 [ ] Race 2 [ ] Race 3 [ ] Race 4 [ ] Race 5 [ ] Other (Specify)

[ ] Target Spot (*Corynespora cassiicola*)

[ ] Downy Mildew (*Peronospora trifoliorum* var. *manshurica*)

[ ] Powdery Mildew (*Microsphaera diffusa*)

★ [1] Brown Stem Rot (*Cephalosporium gregatum*)

[ ] Stem Canker (*Diaporthe phaseolorum* var. *caulivora*)

5

19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant) (Continued)

FUNGAL DISEASES: (Continued)

★ [2] Pod and Stem Blight *(Diaporthe phaseolorum* var; *sojae)*

[1] Purple Seed Stain *(Cercospora kikuchii)*

[0] Rhizoctonia Root Rot *(Rhizoctonia solani)*

Phytophthora Rot *(Phytophthora megasperma* var. *sojae)*

★ [2] Race 1 [0] Race 2 [2] Race 3 [2] Race 4 [0] Race 5 [0] Race 6 [2] Race 7

[0] Race 8 [0] Race 9 [X] Other *(Specify)* Race 10-2, Race 16-1, Genes from Higan

VIRAL DISEASES:

[0] Bud Blight (Tobacco Ringspot Virus)

[0] Yellow Mosaic (Bean Yellow Mosaic Virus)

★ [0] Cowpea Mosaic (Cowpea Chlorotic Virus)

[0] Pod Mottle (Bean Pod Mottle Virus)

★ [0] Seed Mottle (Soybean Mosaic Virus)

NEMATODE DISEASES:

Soybean Cyst Nematode *(Heterodera glycines)*

★ [0] Race 1 [ ] Race 2 [ ] Race 3 [ ] Race 4 [ ] Other *(Specify)* _____

[0] Lance Nematode *(Hoplolaimus Colombus)*

★ [0] Southern Root Knot Nematode *(Meloidogyne incognita)*

★ [0] Northern Root Knot Nematode *(Meloidogyne Hapla)*

[0] Peanut Root Knot Nematode *(Meloidogyne arenaria)*

[0] Reniform Nematode *(Rotylenchulus reniformis)*

[0] OTHER DISEASE NOT ON FORM *(Specify)*: _____

20. PHYSIOLOGICAL RESPONSES: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

★ [1] Iron Chlorosis on Calcareous Soil

[ ] Other *(Specify)* _____

21. INSECT REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

[0] Mexican Bean Beetle *(Epilachna varivestis)*

[0] Potato Leaf Hopper *(Empoasca fabae)*

[ ] Other *(Specify)* _____

22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant Shape	-	Seed Coat Luster	
Leaf Shape	-	Seed Size	Flyer
Leaf Color	Resnik	Seed Shape	-
Leaf Size	-	Seedling Pigmentation	Resnik

23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data

VARIETY	NO. OF DAYS MATURITY	PLANT LODGING SCORE	CM PLANT HEIGHT	LEAFLET SIZE		SEED CONTENT		SEED SIZE G/100 SEEDS	NO. SEEDS/ POD
				CM Width	CM Length	% Protein	% Oil		
Editon Submitted	130	1.4	81	9.4	12.3	39.4	21.3	14.0	
Resnik Name of Similar Variety	127	1.4	81	8.4	11.3	40.5	21.1	14.6	

PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:

1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.
2. Buttery, B.R. and R.I. Buzzell. 1968. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.
3. Hymowitz, T. 1973. Electrophoretic analysis of SBTI-A_2 in the USDA soybean germplasm collection. Crop Sci., 13: 420-421.
4. Payne, R.C. and L.F. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol. 1: 1-19.

'Edison' Exhibit E - Statement of the Basis of Applicant's Ownership.

'Edison' soybean is considered to be owned by the Ohio Agricultural Research and Development Center, The Ohio State University. The original cross, two backcrosses, selection of the original plant, subsequent testing of the breeding line, compositing, and seed increase of the cultivar was conducted by OSU-OARDC breeders and their supervised staff or completed by means of reciprocal or contractual arrangements with other institutions which in no way compromised ownership.